

## ABSTRACT

Disclosed is a lossless image streaming system for the transmission of images over a communication network. The system eliminates the necessity to store a compressed version of the original image, by losslessly streaming ROI data using the original stored image. The imaging system of the present invention also avoids the computationally intensive task of compression of the full image. When a user wishes to interact with a remote image, the imaging server performs a fast preprocessing step in near real time after which it can respond to any ROI requests also in near real time. When a ROI request arrives at the server, a sophisticated progressive image encoding algorithm is performed, but not for the full image. Instead, the encoding algorithm is performed only for the ROI. Since the size of the ROI is bounded by the size and resolution of the viewing device at the client and not by the size of the image, only a small portion of the full progressive coding computation is performed for a local area of the original image.